Contents of Volume 146, No. 1, 1975

PAGE

Biosynthesis and Degradation

Sterol biosynthesis in the echinoderm *Asterias rubens*.
By A. G. Smith & L. J. Goad 25

The conversion of cholest-5-en-3β-ol into cholest-7-en-3β-ol by the echinoderms *Asterias rubens* and *Solaster papposus*.
By A. G. Smith & L. J. Goad 35

Effects of γ-irradiation on biosynthesis of different types of ribonucleic acids in normal and regenerating rat liver.
By G. G. Markov, G. N. Dessev, G. C. Russev & R. G. Tsanev 41

The properties of hydrogen peroxide production under hyperoxic and hypoxic conditions of perfused rat liver.
By N. Oshino, D. Jamieson & B. Chance 53

Optical measurement of the catalase–hydrogen peroxide intermediate (Compound I) in the liver of anaesthetized rats and its implication to hydrogen peroxide production *in situ*.
By N. Oshino, D. Jamieson, T. Sugano & B. Chance 67

Metabolism of xanthine and hypoxanthine in the tea plant (*Thea sinensis* L.).
By T. Suzuki & E. Takahashi 79

Biosynthesis of caffeine by tea leaf extracts. Enzymic formation of theobromine from 7-methylxanthine and of caffeine from theobromine.
By T. Suzuki & E. Takahashi 87

Inhibition by ricin of protein synthesis *in vitro*. Inhibition of the binding of elongation factor 2 and of adenosine diphosphate-ribosylated elongation factor 2 to ribosomes.
By L. Montanaro, S. Sperti, A. Mattioli, G. Testoni & F. Stirpe 127

Albumin, fibrinogen and transferrin synthesis in isolated rat hepatocyte suspensions. A model for the study of plasma protein synthesis.
By K. N. Jeejeebhoy, J. Ho, G. R. Greenberg, M. J. Phillips, A. Bruce-Robertson & U. Sodtke 141

Microbial metabolism of the pyridine ring. Metabolic pathways of pyridine biodegradation by soil bacteria.
By G. K. Watson & R. B. Cain 157

PAGE

Purification and some properties of a soluble benzene-oxidizing system from a strain of *Pseudomonas*.
By B. C. Axcell & P. J. Geary 173

Incorporation of isotopic carbon into cerebral glycogen from non-glucose substrates.
By M. E. Phillips & R. V. Coxon 185

The identification and biosynthesis of siderochromes formed by *Micrococcus denitrificans*.
By G. H. Tait 191

Role of glycerol 3-phosphate dehydrogenase in glyceride metabolism. Effect of diet on enzyme activities in chicken liver.
By J. W. Harding, Jr., E. A. Pyeritz, E. S. Copeland & H. B. White, III 223

Peptidoglycan synthesis in *Bacillus licheniformis*. The inhibition of cross-linking by benzylpenicillin and cephaloridine *in vivo* accompanied by the formation of soluble peptidoglycan.
By Z. Tynecka & J. B. Ward 253

Aerobic lactate production by mammary tissue (*Short Communication*).
By A. R. Elkin & N. J. Kuhn 273

Hydroxypyruvate as a gluconeogenic substrate in rat hepatocytes (*Short Communication*).
By D. H. Williamson & E. V. Ellington 277

Bioenergetics

Electron-paramagnetic-resonance spectroscopy studies of iron–sulphur centres of submitochondrial particles from iron- and sulphur-deficient *Candida utilis*.
By T. A. Gray, P. B. Garland, D. J. Lowe & R. C. Bray 239

Subcellular Structures

Some observations on chlorophyll(ide) synthesis by isolated etioplasts.
By W. T. Griffiths 17

Structural equivalents of latency for lysosome hydrolases.
By F. M. Baccino & M. F. Zuretti 97

Cellular Interactions and Control Processes

The effect of phenobarbitone on protein synthesis by liver polyribosomes in fed and starved rats.
By G. Ragnotti & M. G. Aletti 1

PAGE

Lack of influence of the membranes of the endoplasmic reticulum on the capacity for protein synthesis of the rat liver polyribosomes.
By G. Ragnotti, M. G. Aletti & T. L. Cipollini 13

Multiple cyclic nucleotide phosphodiesterase activities from rat tissues and occurrence of a calcium - plus - magnesium - ion - dependent phosphodiesterase and its protein activator.
By S. Kakiuchi, R. Yamazaki, Y. Teshima, K. Uenishi & E. Miyamoto 109

Induction of dopa (3,4-dihydroxyphenylalanine) decarboxylase in blowfly integument by ecdysone. A demonstration of synthesis of the enzyme *de novo*.
By E. G. Fragoulis & C. E. Sekeris 121

Studies on a wide-spectrum intestinal dipeptide uptake system in the monkey and in the human.
By M. Das & A. N. Radhakrishnan 133

Biochemical and enzymic changes during erythrocyte differentiation. The significance of final cell division.
By M. J. Denton, N. Spencer & H. R. V. Arnstein 205

Role of cell membrane galactosyltransferase in concanavalin A agglutination of erythrocytes.
By D. K. Podolsky & M. M. Weiser 213

PAGE

Glucose metabolism in perfused skeletal muscle. Interaction of insulin and exercise on glucose uptake.
By M. Berger, S. Hagg & N. B. Ruderman 231

Relationship between enhanced turnover of phosphatidylinositol and lymphocyte activation by mitogens.
By V. C. Maino, M. J. Hayman & M. J. Crumpton 247

Subunit A from cholera toxin is an activator of adenylate cyclase in pigeon erythrocytes (*Short Communication*).
By S. van Heyningen & C. A. King 269

Lack of relationship between activity of chromatin-bound proteinase and cell growth rates (*Short Communication*).
By C.-B. Chae, M. C. Smith & H. P. Morris 281

Stimulation of the pathway of porphyrin synthesis in the liver of rats and mice by griseofulvin, 3,5 - diethoxycarbonyl - 1,4 - dihydrocollidine and related drugs: evidence for two basically different mechanisms (*Short Communication*).
By F. De Matteis & A. H. Gibbs 285

Contents of Volume 146, No. 2, 1975

PAGE

Biosynthesis and Degradation

Glycosylation of ribonuclease A catalysed by rabbit liver extracts.
By Z. Khalkhali & R. D. Marshall 299

Phospholipid biosynthesis in the anaerobic protozoon *Entodinium caudatum*.
By T. E. Broad & R. M. C. Dawson 317

Increased synthesis of low-molecular-weight nuclear ribonucleic acids of rat liver after gamma irradiation and hepatectomy.
By A. Fónagy & E. J. Hidvégi 357

Biosynthesis of serum albumin in rat liver. Isolation and probable structure of 'pro-albumin' from rat liver.
By P. S. Quinn, M. Gamble & J. D. Judah 389

Transfer of serine into polypeptides and myosin by chromatographic species of seryl-transfer ribonucleic acid.
By M. Nwagwu 395

PAGE

The synthesis of fatty acids in avocado mesocarp and cauliflower bud tissue.
By P. J. Weaire & R. G. O. Kekwick 425

The fractionation of the fatty acid synthetase activities of avocado mesocarp plastids.
By P. J. Weaire & R. G. O. Kekwick 439

Bioenergetics

The microbial metabolism of C_1 compounds. The cytochromes of *Pseudomonas* AM1.
By C. Anthony 289

Phase transitions in yeast mitochondrial membranes. The effect of temperature on the energies of activation of the respiratory enzymes of *Saccharomyces cerevisiae*.
By K. Watson, E. Bertoli & D. E. Griffiths 401

Membrane-lipid unsaturation and mitochondrial function in *Saccharomyces cerevisiae*.
By K. Watson, R. L. Houghton, E. Bertoli & D. E. Griffiths 409

GENERAL BOOKBINDING CO.
75 256AA 2 013 1 C 2625
QUALITY CONTROL MARK

CONTENTS

PAGE

Metabolite transport in mutants of *Escherichia coli* K12 defective in electron transport and coupled phosphorylation.
By H. Rosenberg, G. B. Cox, J. D. Butlin & S. J. Gutowski 417

The decrease of mitochondrial substrate uptake caused by trialkyltin and trialkyl-lead compounds in chloride media and its relevance to inhibition of oxidative phosphorylation.
By D. N. Skilleter 465

Subcellular Structures

Electrophoretic and centrifugation behaviour of mitochondrial ribonucleic acid from Walker 256 carcinosarcoma.
By N. F. González-Cadavid & J. L. Pérez 361

Functional polarity of the rat hepatocyte surface membrane. Isolation and characterization of plasma-membrane subfractions from the blood-sinusoidal, bile-canalicular and contiguous surfaces of the hepatocyte.
By M. H. Wisher & W. H. Evans 375

Subcellular localization of pulmonary angiotensin-converting enzyme (kininase II) (*Short Communication*).
By J. W. Ryan, U. S. Ryan, D. R. Schultz, C. Whitaker, A. Chung & F. E. Dorer 497

Hepatic clearance of adenosine 3′:5′-cyclic monophosphate from plasma in the rat (*Short Communication*).
By R. C. Strange & I. W. Percy-Robb 509

Cellular Interactions and Control Processes

Biosynthesis of phosphatidylethanolamines and phosphatidylcholines from ethanolamine and choline in rat liver.
By R. Sundler & B. Åkesson 309

The activities and intracellular distribution of nicotinamide–adenine dinucleotide phosphate–malate dehydrogenase, phosphoenolpyruvate carboxykinase and pyruvate carboxylase in rat, guinea-pig and rabbit tissues.
By E. D. Saggerson & C. J. Evans 329

Evidence against an involvement of cyclic nucleotides in the induction of betacyanin synthesis by cytokinins.
By D. C. Elliott & A. W. Murray 333

PAGE

The dependence on vitamin E and selenium of drug demethylation in rat liver microsomal fractions.
By A. S. M. Giasuddin, C. P. J. Caygill, A. T. Diplock & E. H. Jeffery 339

Drug induction of hepatic glutathione *S*-transferases in male and female rats.
By N. Kaplowitz, J. Kuhlenkamp & G. Clifton 351

The effects of L-leucine on the synthesis of urea, glutamate and glutamine by isolated rat liver cells.
By J. Mendes-Mourão, J. D. McGivan & J. B. Chappell 457

The relationship between lipid mobility and the specific hormone binding of thyroid membranes.
By C. L. Bashford, S. J. Harrison, G. K. Radda & Q. Mehdi 473

The clearing-factor lipase activity of isolated fat-cells.
By A. Cryer, P. Davies, E. R. Williams & D. S. Robinson 481

Thymidine kinase of mouse spleen cells *in vivo* and *in vitro*.
By I. Olsen & G. Harris 489

Effect of depletion of vitamin A, followed by supplementation with retinyl acetate or retinoic acid, on regeneration of rat liver (*Short Communication*).
By M. Jayaram, K. Sarada & J. Ganguly 501

Incorporation of L-[1-^{14}C]leucine in protein by liver postmitochondrial supernatant: opposing effects of preincubated nicotinamide–adenine dinucleotide phosphate and 4-dimethylamino-3′-methylazobenzene (*Short Communication*).
By N. P. Madsen & J. E. Labuc 505

Metabolism in Whole Organisms

Metabolic interactions of dichloroacetate and insulin in experimental diabetic ketoacidosis. Studies on whole animals and after functional hepatectomy.
By P. J. Blackshear, P. A. H. Holloway & K. G. M. M. Alberti 447

Contents of Volume 146, No. 3, 1975

PAGE

Biosynthesis and Degradation

Properties of phosphoenolpyruvate carboxykinase (guanosine triphosphate) synthesized in hepatoma cells in the presence of amino acid analogues.
By S. E. Knowles, J. M. Gunn, L. Reshef, R. W. Hanson & F. J. Ballard 585

Increased degradation rates of protein synthesized in hepatoma cells in the presence of amino acid analogues.
By S. E. Knowles, J. M. Gunn, R. W. Hanson & F. J. Ballard 595

A mannosyl-carrier lipid of bovine adrenal medulla and rat parotid.
By D. A. White & C. J. Waechter 645

Bioenergetics

The control of tricarboxylate-cycle oxidations in blowfly flight muscle. The steady-state concentrations of citrate, isocitrate, 2-oxoglutarate and malate in flight muscle and isolated mitochondria.
By R. N. Johnson & R. G. Hansford 527

The control of tricarboxylate-cycle oxidations in blowfly flight muscle. The oxidized and reduced nicotinamide–adenine dinucleotide content of flight muscle and isolated mitochondria, the adenosine triphosphate and adenosine diphosphate content of mitochondria, and the energy status of the mitochondria during controlled respiration.
By R. G. Hansford 537

Evidence for a calcium-ion-transport system in mitochondria isolated from flight muscle of the developing sheep blowfly *Lucilia cuprina*.
By F. L. Bygrave, A. A. Daday & F. A. Doy 601

A kinetic study of sulphate transport in rat liver mitochondria.
By M. Crompton, F. Palmieri, M. Capano & E. Quagliariello 667

The stoicheiometry of the absorption of protons with phosphate and L-glutamate by yeasts of the genus *Saccharomyces*.
By M. Cockburn, P. Earnshaw & A. A. Eddy 705

Subcellular Structures

The selectivity and stoicheiometry of membrane binding sites for polyribosomes, ribosomes and ribosomal subunits *in vitro*.
By T. K. Shires, C. M. McLaughlin & H. C. Pitot 513

PAGE

Plasma membranes from experimental granulation tissue.
By P. Lehtinen, E. Vuorio & E. Kulonen 565

The ribonucleic acids of the mammary gland of the guinea pig.
By P. Ashby & P. N. Campbell 575

The properties and extracellular location of 5′-nucleotidase of the rat fat-cell plasma membrane.
By A. C. Newby, J. P. Luzio & C. N. Hales 625

A micro method for simultaneous determination of galactosyltransferase and 5′-nucleotidase activities in cell fractions (*Short Communication*).
By L. S. Freilich, M. E. Richmond, A. C. Reppucci, Jr. & J. E. Silbert 741

Cellular Interactions and Control Processes

The influence of environmental agents on prostaglandin biosynthesis and metabolism in the lung. Inhibition of lung 15-hydroxyprostaglandin dehydrogenase by exposure of guinea pigs to 100 per cent oxygen at atmospheric pressure.
By D. G. Parkes & T. E. Eling 549

Separation of a proteoglycan fraction from Kurloff cells stimulating protein synthesis in macrophages.
By M. F. Dean & H. Muir 557

Dynamics of oestrogen-receptor distribution between the cytosol and nuclear fractions of immature rat uterus after oestradiol administration.
By J. Mešter & E. E. Baulieu 617

Metabolic interactions of glucose, acetoacetate and adrenaline in rat submaxillary gland *in vitro*.
By M. P. Thompson & D. H. Williamson 635

The binding of L-tryptophan to serum albumins in the presence of non-esterified fatty acids.
By V. J. Cunningham, L. Hay & H. B. Stoner 653

The effects of diet, lipolysis and limb ischaemia on the distribution of plasma tryptophan in the rat.
By H. B. Stoner, V. J. Cunningham, P. M. Elson & A. Hunt 659

PAGE

Modification of the template capacity of liver chromatin for form-B ribonucleic acid polymerase by food intake in rats under controlled feeding schedules.
By B. Barbiroli, B. Tadolini, M. S. Moruzzi & M. G. Monti 687

The effect of spermine on transcription of mammalian chromatin by mammalian deoxyribonucleic acid-dependent ribonucleic acid polymerase.
By G. Moruzzi, B. Barbiroli, M. S. Moruzzi & B. Tadolini 697

Lipid requirement of the membrane sodium-plus-potassium ion-dependent adenosine triphosphatase system.
By K. P. Wheeler, J. A. Walker & D. M. Barker 713

Differential effects of lipid depletion on membrane sodium-plus-potassium ion-dependent adenosine triphosphatase and potassium ion-dependent phosphatase.
By K. P. Wheeler & J. A. Walker 723

PAGE

Role of phospholipid in the intermediate steps of the sodium-plus-potassium ion-dependent adenosine triphosphatase reaction.
By K. P. Wheeler 729

Development

Protein synthesis in chloroplasts. Characteristics and products of protein synthesis *in vitro* in etioplasts and developing chloroplasts from pea leaves.
By S. G. Siddell & R. J. Ellis 675

Metabolism in Whole Organisms

Lipid metabolism in the cow during starvation-induced ketosis.
By P. E. Brumby, M. Anderson, B. Tuckley, J. E. Storry & K. G. Hibbitt 609

Metabolic changes in rats during developing thiamin deficiency (*Short Communication*).
By C. C. Liang 739